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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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MAR 27 2002

Attorney Docket No.: SJ-97-0016B (SJ-0014)
Inventors: Sorrentino et al.
Serial No.: 09/584,586
Filing Date: May 31, 2000
Examiner: E. Sorbello
Group Art Unit: 1633
Title: RELATIONSHIP OF ABC TRANSPORT
PROTEINS WITH HEMATOPOIETIC STEM
CELLS AND METHODS OF USE THEREOF

TECH CENTER 1600.2900

Assistant Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

POWER OF ATTORNEY WITH REVOCATION

Revoking any and all powers of attorney heretofore given in the matter of the above-entitled application, the undersigned, assignee of the entire interest in the above-identified application, hereby appoints Licata & Tyrrell P.C., Jane Massey Licata, Registration No. 32,257, Kathleen A. Tyrrell, Registration No. 38,350, Laura Plunkett, Registration No. 45,015, and, Bridget C. Sciamanna, Registration No. 47,333, of Marlton, New Jersey, as attorney, with full power of substitution and revocation, to prosecute this application, to make alterations and amendments therein, to receive the patent, and to transact all business in the Patent and Trademark Office connected therewith.

Send all future correspondence and address all telephone calls
to:

Jane Massey Licata, Esquire
Licata & Tyrrell P.C.
66 E. Main Street
Marlton, New Jersey 08053
Phone: (856) 810-1515
Fax: (856) 810-1454

Respectfully submitted,



St. Jude Children's Research Hospital

Name:

Title:

**J. SCOTT ELMER
DIRECTOR, OFFICE OF
TECHNOLOGY LICENSING**

Date: 02/28, 2002

ASSIGNMENT

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MAR 22 2002

TECH CENTER 1600 2900

WHEREAS, WE,

Brian Sorrentino, a citizen of the United States, residing at
6590 Quail Point Circle North
Memphis, TN 38103; and

Kevin Bunting, a citizen of the United States, residing at
~~99 North Main #1112~~ 3493 Greystone Lane, Apt. 1-A
Memphis, TN 38120; Columbia, MD 21045

KG

John Schuetz, a citizen of the United States, residing at
1442 Carr Avenue
Memphis, TN 38105; and

Hiromitsu Nakauchi, a citizen of the United States, residing at
Department of Immunology
Inst. of Basic Med. Sciences
University of Tsukuba
Tsukuba, Ibaraki 305
JAPAN

have invented certain new and useful improvements in

RELATIONSHIP OF ABC TRANSPORT PROTEINS WITH HEMATOPOIETIC
STEM CELLS AND METHODS OF USE THEREOF

for which we have filed an Application for Letters Patent in the United States on May 31,
2000, and was accorded U.S. Serial No. 09/584,586; and

WHEREAS, ST. JUDE CHILDREN'S RESEARCH HOSPITAL,
an education corporation organized and existing under
the laws of the State of Tennessee,
with office at 332 North Lauderdale Street, Memphis, TN 38105-2794,

ASSIGNEE, is desirous of obtaining the entire right, title and interest in, to and under the
said improvements and the said application.

NOW, THEREFORE, for other good and valuable consideration, the receipt of which
is hereby acknowledged, we the said

Brian Sorrentino; Kevin Bunting; John Schuetz; and Hiromitsu Nakauchi

have sold, assigned, transferred and set over, and by these presents do hereby sell, assign,
transfer and set over, to the said

ST. JUDE CHILDREN'S RESEARCH HOSPITAL,

its successors, legal representatives and assigns, the entire right, title and interest in, to and under the said improvements, and the said application and all divisions, renewals, and continuations thereof, and all Letters Patent of the United States which may be granted thereon and all reissues and extensions thereof, and all applications for Letters Patent which may hereafter be filed for said improvements in any country or countries foreign to the United States, including the right to claim priority under the terms of any appropriate International Convention based upon said application for Letters Patent of the United States, and all Letters Patent which may be granted from said improvements in any country or countries foreign to the United States and extensions, renewals and reissues thereof; and we hereby authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any country or countries foreign to the United States, whose duty is to issue patents on applications as aforesaid, to issue all Letters Patent for said improvements to the said

ST. JUDE CHILDREN'S RESEARCH HOSPITAL,

its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND WE HEREBY covenant that we have full right to convey the interest herein assigned in the manner hereinabove set forth, and that we have not executed, and will not execute, any agreement in conflict herewith.

AND WE HEREBY further covenant and agree that we will communicate to the said

ST. JUDE CHILDREN'S RESEARCH HOSPITAL,

its successors, legal representatives and assigns, any fact known to us respecting said improvements, and testify in any legal proceeding, sign all lawful papers, execute all divisions, continuing and reissue applications, make all rightful oaths and generally do everything possible to aid the said

ST. JUDE CHILDREN'S RESEARCH HOSPITAL,

its successors, legal representatives and assigns, to obtain and enforce proper Patent Protection for said improvements in the United States.

IN TESTIMONY WHEREOF, we hereunto set our hand and seal this day and year set opposite our signatures.

Date 8/17, 2000

Brian Sorrentino L.S.
Brian Sorrentino

State of Tennessee :
County of Shelby : ss.

Before me this 7 day of Aug 2000, personally appeared Brian Sorrentino, to me personally known to be the person who is described in and who executed the above instrument, and acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

Debra C. McKinney
NOTARY PUBLIC
MY COMMISSION EXPIRES:
Oct. 15, 2003

(Affix Seal Here)

Date August 22, 2000

Kevin Bunting L.S.
Kevin Bunting

State of MARYLAND :
County of MONTGOMERY : ss.

Before me this 22 day of AUG 2000, personally appeared Kevin Bunting, to me personally known to be the person who is described in and who executed the above instrument, and acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

Patricia D. Kloss
NOTARY PUBLIC

(Affix Seal Here)

PATRICIA D. KLOSS
NOTARY PUBLIC STATE OF MARYLAND
My Commission Expires July 17, 2004

Date 2-2, 2000

John Schuetz

L.S.

State of

: ss.

County of

Before me this 2 day of Aug, 2000, personally appeared John Schuetz, to me personally known to be the person who is described in and who executed the above instrument, and acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

Rebecca D. Hickey
NOTARY PUBLIC

My COMMISSION EXPIRES:
Oct. 15, 2003

(Affix Seal Here)

Date _____, 2000

Hiromitsu Nakauchi

L.S.

State of

: ss.

County of

Before me this _____ day of _____, 2000, personally appeared Hiromitsu Nakauchi, to me personally known to be the person who is described in and who executed the above instrument, and acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

NOTARY PUBLIC

(Affix Seal Here)

ASSIGNMENT

WHEREAS, WE,

Brian Sorrentino, a citizen of the United States, residing at
6590 Quail Point Circle North
Memphis, TN 38103; and

Kevin Bunting, a citizen of the United States, residing at
99 North Main #1112
Memphis, TN 38120;

John Schuetz, a citizen of the United States, residing at
1442 Carr Avenue
Memphis, TN 38105; and

Hiromitsu Nakauchi, a citizen of the ^{Japan} ~~United States~~, residing at

~~Department of Immunology~~ 429-3 Oi, Kukizaki-machi
~~Inst. of Basic Med. Sciences~~ Inashiki-gun, Ibaraki,
~~University of Tsukuba~~ JAPAN 300-1243
~~Tsukuba, Ibaraki 305~~
~~JAPAN~~ H.N.

have invented certain new and useful improvements in

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STEM CELLS AND METHODS OF USE THEREOF

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an education corporation organized and existing under
the laws of the State of Tennessee,
with office at 332 North Lauderdale Street, Memphis, TN 38105-2794,

ASSIGNEE, is desirous of obtaining the entire right, title and interest in to and under the
said improvements and the said application;

NOW, THEREFORE, for other good and valuable consideration, the receipt of which
is hereby acknowledged, we the said

Brian Sorrentino; Kevin Bunting; John Schuetz; and Hiromitsu Nakauchi

have sold, assigned, transferred and set over, and by these presents do hereby sell, assign,
transfer and set over, to the said

ST. JUDE CHILDREN'S RESEARCH HOSPITAL,

its successors, legal representatives and assigns, the entire right, title and interest in, to and under the said improvements, and the said application and all divisions, renewals, and continuations thereof, and all Letters Patent of the United States which may be granted thereon and all reissues and extensions thereof, and all applications for Letters Patent which may hereafter be filed for said improvements in any country or countries foreign to the United States, including the right to claim priority under the terms of any appropriate International Convention based upon said application for Letters Patent of the United States, and all Letters Patent which may be granted from said improvements in any country or countries foreign to the United States and extensions, renewals and reissues thereof; and we hereby authorize and request the Commissioner of Patents and Trademarks of the United States and any official of any country or countries foreign to the United States, whose duty is to issue patents on applications as aforesaid, to issue all Letters Patent for said improvements to the said

ST. JUDE CHILDREN'S RESEARCH HOSPITAL.

its successors, legal representatives and assigns, in accordance with the terms of this instrument.

AND WE HEREBY covenant that we have full right to convey the interest herein assigned in the manner hereinabove set forth, and that we have not executed, and will not execute, any agreement in conflict herewith.

AND WE HEREBY further covenant and agree that we will communicate to the said

ST. JUDE CHILDREN'S RESEARCH HOSPITAL.

its successors, legal representatives and assigns, any fact known to us respecting said improvements, and testify in any legal proceeding, sign all lawful papers, execute all divisions, continuing and reissue applications, make all rightful oaths and generally do everything possible to aid the said

ST. JUDE CHILDREN'S RESEARCH HOSPITAL.

its successors, legal representatives and assigns, to obtain and enforce proper Patent Protection for said improvements in the United States.

IN TESTIMONY WHEREOF, we hereunto set our hand and seal the day and year set opposite our signatures.

Date _____, 2000 _____ L.S.

Brian Sorrentino

State of _____ :

: ss.

County of _____ :

Before me this _____ day of _____ 2000, personally appeared Brian Sorrentino, to me personally known to be the person who is described in and who executed the above instrument, and acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

NOTARY PUBLIC

(Affix Seal Here)

Date _____, 2000 _____ L.S.

Kevin Bunting

State of _____ :

: ss.

County of _____ :

Before me this _____ day of _____ 2000, personally appeared Kevin Bunting, to me personally known to be the person who is described in and who executed the above instrument, and acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

NOTARY PUBLIC

(Affix Seal Here)

Date _____, 2000

John Schuetz

L.S.

State of _____

:

: ss.

County of _____

:

Before me this _____ day of _____ 2000, personally appeared John Schuetz, to me personally known to be the person who is described in and who executed the above instrument, and acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

NOTARY PUBLIC

(Affix Seal Here)

Date Sept. 26, 2000

Hiromitsu Nakauchi

L.S.

Hiromitsu Nakauchi

State of _____

:

: ss.

County of _____

:

Before me this 26th day of Sep. 2000, personally appeared Hiromitsu Nakauchi, to me personally known to be the person who is described in and who executed the above instrument, and acknowledged to me that he/she executed the same of his/her own free will for the purposes therein set forth.

Yasuo Ozechi
NOTARY PUBLIC

(Affix Seal Here)



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NOTARIAL CERTIFICATE

This is to certify that Hirumitsu Nakauchi

affixed his signature in my very presence to
attached document.

Dated this 26th day of September, 2000.

Yasuo Azechi

YASUO AZECHI

Notary

1-7-21 Enzisaki Tsuchiura-shi

Ibaraki-ken Japan

Mito Legal Affairs Bureau

平 1 2 年 第 340 号

認

証

嘱託人中内啓光は、本職の面前で添付書

署名した

以上のとおり証明する

平成 1 2 年 9 月 2 9 日 日本職役場において

茨城県土浦市富士崎 1 丁目 7 番 21 号

水戸地方法務局所属

公証人

畦池靖郎



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TECH CENTER 1600 2900

CERTIFICATE UNDER 37 CFR 3.73(b)

St. Jude Children's Research Hospital, a corporation, certifies that it is the assignee of the entire right, title and interest in the patent application identified above by virtue of an assignment from the inventor(s) of the patent application identified above. The Assignment is attached.

The undersigned has reviewed all the documents in the chain of title of the patent application identified above and, to the best of the undersigned's knowledge and belief, title is in the assignee identified above.

The undersigned (whose title is supplied below) is empowered to sign this certificate on behalf of the assignee.

I hereby declare that all statements made herein of my own belief are true, and that all statements made on information and belief are believed to be true; and further, that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both, under Section 1001, Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

J. Scott Elmer
Name:

Title:

**J. SCOTT ELMER
DIRECTOR, OFFICE OF
TECHNOLOGY LICENSING**

Date: 3-22-02, 2002